



Status of Global Computing

Frank Wurthwein

UCSD

for the CDF Collaboration

- **Recap of Context**
- **Status**
- **Future directions**





Context

- **Physics Motivation:**
 - **Max. physics output @ low Lumi**
--> CSL output rate from 80 to 360Hz by 06
- **Accelerate Global Computing plans:**
50% @ FNAL & 50% outside FNAL by 05
- **Technical review: "Bird Review" 9/11 2003**
- **Fiscal Requests presented at CDF IFC 10/30 2003**
- **PAC review Dec. 2003**

Strong Support from IFC & Bird Review & PAC!



Request from IFC last year

**Guarantee proper accounting standards for
Consumed Computing resources.**

See Belforte's talk.

**Endorsement by the PAC that the extra bandwidth taken
by CDF is well motivated from a physics perspective.**

Received strong endorsement.



Delivered Offsite Computing

	<i>Ghz P4</i>	<i>TB disk</i>
<i>Canada</i>	<i>500</i>	<i>10</i>
<i>Italy</i>	<i>300</i>	<i>30</i>
<i>Japan</i>	<i>150</i>	<i>10</i>
<i>Korea</i>	<i>120</i>	<i>1</i>
<i>Taiwan</i>	<i>135</i>	<i>3</i>
<i>MIT</i>	<i>115</i>	<i>1</i>
<i>UCSD</i>	<i>280</i>	<i>5</i>
<i>UK</i>	<i>100</i>	<i>~10</i>
<i>Rutgers</i>	<i>25-100</i>	<i><4</i>
<i>Germany missing ?</i>		

Accounting rules:

Service for all of CDF,

including MC production



FY05 Offsite Computing

	Ghz P4	TB disk
Canada	500	10
Italy	300	30
Japan	270	13
Korea	220	1
Taiwan	250	5
Germany	200+	15+ (2005 upgrade not included)
UK	400	10+ (possibly more disk space)
Spain	120	40
MIT	215	4-10
UCSD	280	5
Rutgers	~100	~4 (policy needs to be understood)

Accounting rules:

**Service for all of CDF, incl. GRAM submission,
and MC.**



Deployed Functionality 2004

WAN data management at all sites: SAM

All users have access at all sites: CAF

Resource accounting at all sites: CAF

-> most sites not yet at CUTF level

user accounting: everywhere

executable classification: only 2 sites

=> plan to upgrade sites by end 2004.



Short term Improvements

Reliability of Data Access.

-> **single most important issue!!!**

Uniform & global accounting:

1. uniform dcaf's & global summary

-> **not clear if solution for Grid**

2. longer term: work with OSG & EGEE

on grid solution

-> **January workshop in Italy**

Deploy Distributed Calibration DB.

-> **needed because of DB latencies for**

Europe & Asia.



Future Directions

US grid: Open Science Grid

EU grid: LCG/EGEE

**FNAL is committed to support run2
computing on OSG via SAMGrid.**

**INFN is committed to support run2
computing on LCG/EGEE.**

**CDF work with CMS on making sure both
sides of the Atlantic interoperate, and
share efforts as best as possible.**



Remember

CDF computing is different from anything anybody else does on the grid today.

Our needs are dominated by

user analysis computing

NOT reconstruction

NOT MC production

O(100) times the # of users per VO.

Much less regulated.

Much more dynamic.

Probably 1 step backwards to go 2 steps forward towards OSG/EGEE



Future Directions -- Caveats

As we move towards grid, ...

- ... we may not lose functionality!**
- ... we need to maintain reliability of sites!**
- ... we need to support all CDF users!**

Patience & pragmatism in the transition requires, ...

- ... we need cdfsoft installed!**
- ... we need SAM installed!**
- ... we need run2 specific support!**
- ... we need flexibility of "grid teams" to allow co-existence of run2 and LHC computing infrastructures!**

Please don't expect the impossible!



Summary & Conclusions

Successfully expanded computing offsite.

25% for summer 04

50% goal for summer 05

Started working with OSG & LCG

Need your moral support!

Need your financial support!

Need your patience!



Backup slides



Accounting Policy

Count only resources that are guaranteed.

E.g. Don't count SLAC & BNL

Count only resources available for all.

CDF budget needs to guarantee computing needs of all of CDF are satisfied.